

# 基于真实世界数据的住院患者环孢素相关急性肾损伤发生情况及相关因素分析<sup>△</sup>

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中图分类号 R969 文献标志码 A 文章编号 1001-0408(2026)12-1584-06

DOI 10.6039/j.issn.1001-0408.2026.12.11



**摘要** **目的** 分析住院患者环孢素(CsA)相关急性肾损伤(AKI)的发生情况,挖掘其影响因素并构建风险预测模型。**方法** 采用单中心回顾性研究方法,纳入2018年1月—2024年7月于山东第一医科大学第一附属医院(山东省千佛山医院)接受CsA治疗的住院患者的临床资料,根据其AKI发生情况将其分为AKI组和非AKI组,采用单因素分析及多因素Logistic回归分析筛选CsA相关AKI的独立因素,构建风险预测模型并评估其性能。**结果** 共纳入439例患者,其中54例发生CsA相关AKI,发生率为12.30%。合并肺部细菌感染、巨细胞病毒血症、呼吸衰竭、肾功能不全、消化道出血和接受经外周中心静脉置管术与CsA相关AKI的发生呈正相关(比值比分别为763.750、16.944、41.933、236.806、17.537、212.789,  $P < 0.05$ ),尿酸、前白蛋白、钙水平则与之呈负相关(比值比分别为0.983、0.967、0.058,  $P < 0.05$ )。根据上述因素所建预测模型经Hosmer-Lemeshow检验拟合的 $\chi^2$ 为10.254( $P > 0.05$ ),十折交叉验证的平均曲线下面积(AUC)为0.885;受试者操作特征曲线的AUC为0.883,最佳截断值(0.1)下的敏感度、特异性分别为84.3%、80.4%。**结论** 合并肺部细菌感染、巨细胞病毒血症等6个因素为CsA相关AKI发生的正相关因素,尿酸、前白蛋白、钙水平则为负相关因素;基于上述因素构建的风险预测模型具有良好的预测性能,可辅助临床开展早期风险评估与个体化干预。

**关键词** 环孢素;急性肾损伤;危险因素;预测模型;真实世界研究

## Analysis of the incidence and associated factors of cyclosporine-associated acute kidney injury in hospitalized patients based on real-world data

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**ABSTRACT** **OBJECTIVE** To analyze the incidence of cyclosporine (CsA)-associated acute kidney injury (AKI) in hospitalized patients, identify influencing factors, and construct a risk prediction model. **METHODS** A single-center retrospective study was conducted, enrolling clinical data from hospitalized patients treated with CsA at the First Affiliated Hospital of Shandong First Medical University & Shandong Provincial Qianfoshan Hospital from January 2018 to July 2024. The patients were classified into AKI group and non-AKI group based on the occurrence of CsA-related AKI. Univariate analysis and multivariate Logistic regression analysis were used to identify independent risk factors for CsA-related AKI, and a risk prediction model was constructed and its performance was evaluated. **RESULTS** A total of 439 patients were included, of whom 54 developed CsA-related AKI, with an

<sup>△</sup> **基金项目** 国家自然科学基金项目(No.82504560, No.825045-61);国家卫生健康委医药卫生科技发展研究中心创新药物上市后临床研究科研专项(No.WKZX2024CX501220)

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incidence rate of 12.30%. The occurrence of CsA-associated AKI was positively correlated with concurrent bacterial pulmonary infection, cytomegalovirus viremia, respiratory failure, renal insufficiency, gastrointestinal bleeding, and peripheral central venous catheterization (odds ratios of 763.750, 16.944, 41.933, 236.806, 17.537 and 212.789,